

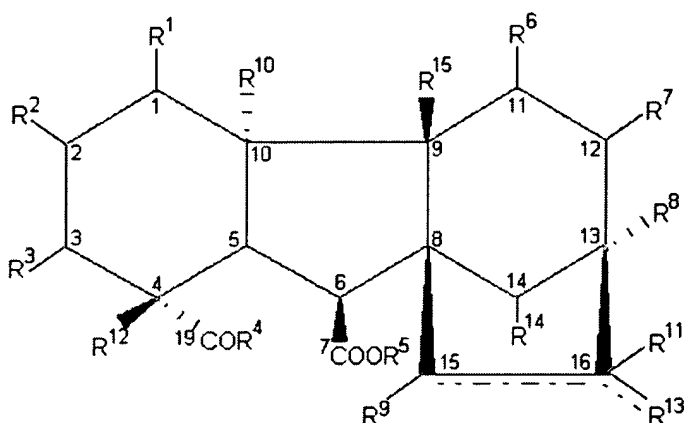


AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application:

Claims 1-7: (Cancelled)

8. (Previously presented) A method of treatment for Type II diabetes and its complications and associated conditions comprising administering a compound selected from formula (1) (Gibberellins)



Formula (1)

wherein

R^1 is H or a group $-O-R^{20}$, where R^{20} is H, a glycosylic ether group (glycoside ether), C_{1-6} alkyl group, or R^1 together with R^2 or R^{10} forms a bond (C_1-C_2 or C_1-C_{10} double bond, respectively);

R^2 is H or a group $-O-R^{21}$, where R^{21} is H, a glycosylic ether group (glycoside ether), or together with R^4 forms a bond (lactone) or R^2 together with R^1 or R^3 forms a bond (C_1-C_2 or C_2-C_3 double bond, respectively);



R^2 is H, =O, or $-O-R^{22}$, where R^{22} is H or a glycosylic ether group (glycoside ether), or R^3 together with R^2 forms a bond (C_2-C_3 double bond);

R^4 is OH, or $-OR^{23}$, where R^{23} is unsubstituted or substituted C_{1-20} alkyl, allyl, amidine, or $-NR^{24}R^{25}$; R^{24} and R^{25} may or may not be the same, are hydrogen, or C_{1-20} alkyl, or allyl; or R^4 together with R^{21} or R^{28} forms a bond (lactone);

R^5 is H or a glycosylic ester (glycoside ester) group, or unsubstituted or substituted C_{1-20} alkyl esters, allyl esters, active esters;

R^6 is H or OH or together with R^7 forms a bond ($C_{11}-C_{12}$ double bond);

R^7 is H, =O, or $-OR^{26}$, where R^{26} is H or a glycosylic ether group (glycoside ether) or R^7 together with R^6 forms a bond ($C_{11}-C_{12}$ double bond);

R^8 is H, hydroxyl, mercaptan, or halogen, amino, azido, $NR^{24}R^{25}$, unsubstituted or substituted C_{1-20} alkyl or allyl, or $-OR^{27}$, where R^{27} is a glycosylic ether group (glycoside ether);

R^9 is H or OH, or together with R^{15} forms a bond (C_9-C_{15} bond);

R^{10} is H, CH_3 , CHO, COOH, or a glycosylic ester (glycoside ester) of said COOH, CH_2O-R^{28} or $-OR^{28}$, where R^{28} is H or together with R^4 forms a bond (lactone) or R^{10} together with R^1 forms a bond (C_1-C_{10} double bond);

R^{11} is H, or OH or is absent;

R^{12} is CH_3 , CH_2OH , COOH or a glycosylic ester (glycoside ester) of said COOH;

R^{13} is methylene, or a divalent hetero-atom, or NR^{29} , where R^{29} is NHR^{30} or OR^{30} where R^{30} is H, or C_{1-20} alkyl; and a double bond is present between C_{16} and R^{13}

when R^{11} is absent; or R^{13} is H, OH, CH_3CHO , CH_2X , where X is halogen, $CHNR^{29}$ where R^{29} is NHR^{30} or OR^{30} where R^{30} is H or C_{1-20} alkyl when R^{11} is H or OH; with the proviso that where R^{11} is OH, R^{13} is not OH;

R^{14} is H or OH;

R^{15} is H, or together with R^9 forms a bond (C_9-C_{15} bond);

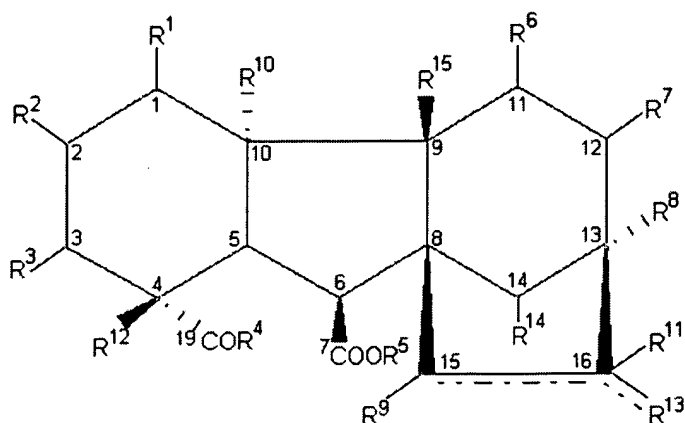
and its pharmaceutically acceptable lactones, esters, active esters, salts and organic bases,

in combination with other compatible therapeutic agents selected from the group consisting of analgesics, anti-hypertensive agents, sedatives, hypnotics, lipid-lowering agents, and anti-infective agents or combinations thereof, to a patient in need thereof.

9. (Previously presented) A method according to claim 11, wherein the Gibberellins are Gibberellin A_3 .

10. (Previously presented) A method according to claim 11, wherein the Gibberellins are a mixture of Gibberellin A_3 and Gibberellin A_4 and/or Gibberellin A_7 .

11. (Previously presented) A method of treatment for Type I and Type II diabetes and its complications and associated conditions comprising administering compounds selected from formula (1) (Gibberellins)



Formula (1)

wherein

R^1 is H or a group $-O-R^{20}$, where R^{20} is H, a glycosylic ether group (glycoside ether), C_{1-6} alkyl group, or R^1 together with R^2 or R^{10} forms a bond (C_1-C_2 or C_1-C_{10} double bond, respectively);

R^2 is H or a group $-O-R^{21}$, where R^{21} is H, a glycosylic ether group (glycoside ether), or together with R^4 forms a bond (lactone) or R^2 together with R^1 or R^3 forms a bond (C_1-C_2 or C_2-C_3 double bond, respectively);

R^3 is H, =O, or $-O-R^{22}$, where R^{22} is H or a glycosylic ether group (glycoside ether), or R^3 together with R^2 forms a bond (C_2-C_3 double bond);

R^4 is OH, or $-OR^{23}$, where R^{23} is unsubstituted or substituted C_{1-20} alkyl, allyl, amidine, or $-NR^{24}R^{25}$; R^{24} and R^{25} may or may not be the same, are hydrogen, C_{1-20} alkyl, or allyl; or R^4 together with R^{21} or R^{28} forms a bond (lactone);

R^5 is H or a glycosylic ester (glycoside ester) group, or unsubstituted or substituted C_{1-20} alkyl esters, allyl esters, active esters;

R^6 is H or OH or together with R^7 forms a bond ($C_{11}-C_{12}$ double bond);

R^7 is H, =O, or $-OR^{26}$, where R^{26} is H or a glycosylic ether group (glycoside ether) or R^7 together with R^6 forms a bond (C_{11} - C_{12} double bond);

R^8 is H, hydroxyl, mercaptan, or halogen, amino, azido, $NR^{24}R^{25}$, unsubstituted or substituted C_{1-20} alkyl or allyl, or $-OR^{27}$, where R^{27} is a glycosylic ether group (glycoside ether);

R^9 is H or OH, or together with R^{15} forms a bond (C_9 - C_{15} bond);

R^{10} is H, CH_3 , CHO, COOH, or a glycosylic ester (glycoside ester) of said COOH, CH_2O-R^{28} or $-OR^{28}$, where R^{28} is H or together with R^4 forms a bond (lactone) or R^{10} together with R^1 forms a bond (C_1 - C_{10} double bond);

R^{11} is H, or OH or is absent;

R^{12} is CH_3 , CH_2OH , COOH or a glycosylic ester (glycoside ester) of said COOH;

R^{13} is methylene, or a divalent hetero-atom, or NR^{29} , where R^{29} is NHR^{30} or OR^{30} where R^{30} is H, or C_{1-20} alkyl; and a double bond is present between C_{16} and R^{13} when R^{11} is absent; or R^{13} is H, OH, CH_3 , CHO, CH_2X , where X is halogen, $CHNR^{29}$ where R^{29} is NHR^{30} or OR^{30} where R^{30} is H or C_{1-20} alkyl when R^{11} is H or OH; with the proviso that where R^{11} is OH, R^{13} is not OH;

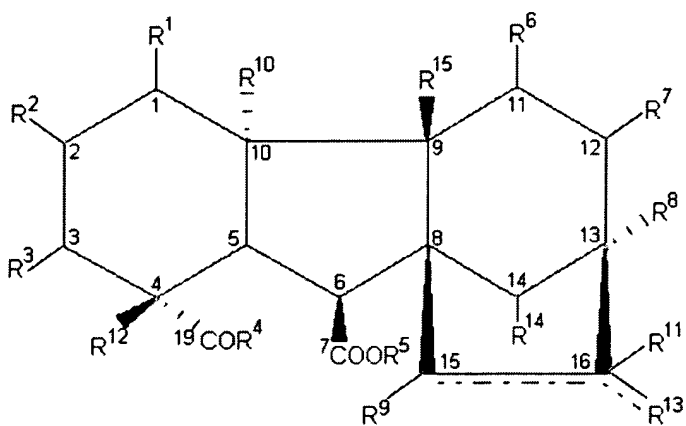
R^{14} is H or OH;

R^{15} is H, or together with R^9 forms a bond (C_9 - C_{15} bond);

and their pharmaceutically acceptable lactones, esters, active esters, salts and organic bases,

in combination with substances selected from the group consisting of insulin, its fragment derivatives, IGFs, and growth factors, or combinations thereof, to a patient in need thereof.

12. (Previously presented) A method of treatment for Type I and Type II diabetes and its complications and associated conditions comprising administering compounds selected from formula (1) (Gibberellins)



Formula (1)

wherein

R^1 is H or a group $-O-R^{20}$, where R^{20} is H, a glycosylic ether group (glycoside ether), C_{1-6} alkyl group, or R^1 together with R^2 or R^{10} forms a bond (C_1-C_2 or C_1-C_{10} double bond, respectively);

R^2 is H or a group $-O-R^{21}$, where R^{21} is H, a glycosylic ether group (glycoside ether), or together with R^4 forms a bond (lactone) or R^2 together with R^1 or R^3 forms a bond (C_1-C_2 or C_2-C_3 double bond, respectively);

R^3 is H, $=O$, or $-O-R^{22}$, where R^{22} is H or a glycosylic ether group (glycoside ether), or R^3 together with R^2 forms a bond (C_2-C_3 double bond);

R^4 is OH, or $-OR^{23}$, where R^{23} is unsubstituted or substituted C_{1-20} alkyl, allyl, amidine, or $-NR^{24}R^{25}$; R^{24} and R^{25} may or may not be the same, are hydrogen, or C_{1-20} alkyl, or allyl; or R^4 together with R^{21} or R^{28} forms a bond (lactone);

R^5 is H or a glycosylic ester (glycoside ester) group, or unsubstituted or substituted C_{1-20} alkyl esters, allyl esters, active esters;

R^6 is H or OH or together with R^7 forms a bond ($C_{11}-C_{12}$ double bond);

R^7 is H, =O, or $-OR^{26}$, where R^{26} is H or a glycosylic ether group (glycoside ether) or R^7 together with R^6 forms a bond ($C_{11}-C_{12}$ double bond);

R^8 is H, hydroxyl, mercaptan, or halogen, amino, azido, $NR^{24}R^{25}$, unsubstituted or substituted C_{1-20} alkyl or allyl, or $-OR^{27}$, where R^{27} is a glycosylic ether group (glycoside ether);

R^9 is H or OH, or together with R^{15} forms a bond (C_9-C_{15} bond);

R^{10} is H, CH_3 , CHO, COOH, or a glycosylic ester (glycoside ester) of said COOH, CH_2O-R^{28} or $-OR^{28}$, where R^{28} is H or together with R^4 forms a bond (lactone) or R^{10} together with R^1 forms a bond (C_1-C_{10} double bond);

R^{11} is H, or OH or is absent;

R^{12} is CH_3 , CH_2OH , COOH or a glycosylic ester (glycoside ester) of said COOH;

R^{13} is methylene, or a divalent hetero-atom, or NR^{29} , where R^{29} is NHR^{30} or OR^{30} where R^{30} is H, or C_{1-20} alkyl; and a double bond is present between C_{16} and R^{13} when R^{11} is absent; or R^{13} is H, OH, CH_3 , CHO, CH_2X , where X is halogen, $CHNR^{29}$ where R^{29} is NHR^{30} or OR^{30} where R^{30} is H or C_{1-20} alkyl when R^{11} is H or OH; with the proviso that where R^{11} is OH, R^{13} is not OH;

R¹⁴ is H or OH;

R¹⁵ is H, or together with R⁹ forms a bond (C₉-C₁₅ bond);

and its pharmaceutically acceptable lactones, esters, active esters, salts and organic bases,
in combination with substances selected from the group consisting of insulin, its fragment derivatives, IGFs, and growth factors, or combinations thereof, along with other compatible therapeutic agents selected from the group consisting of analgesics, anti-hypertensive agents, sedatives, hypnotics, lipid-lowering agents, and anti-infective agents or combinations thereof, to a patient in need thereof.

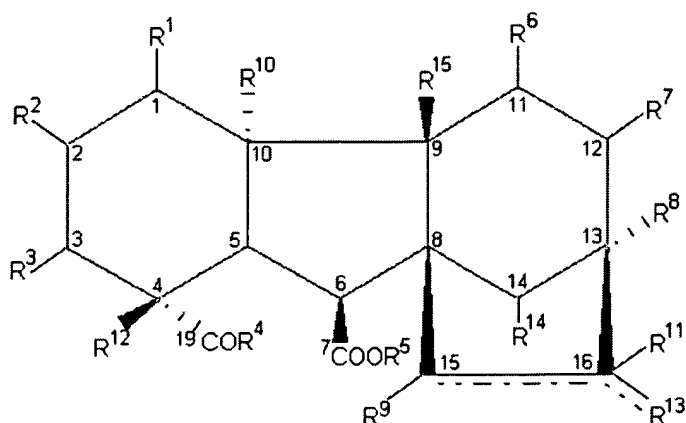
13. (Previously presented) The method according to claim 11, for the treatment of type 1 diabetes and its associated conditions.

14. (Previously presented) The method according to claim 11, for the treatment of type 2 diabetes and its associated conditions.

15. (Previously presented) The method according to claim 14, for the treatment of insulin resistant diabetes.

16. (Previously presented) The method according to claim 1, wherein the diabetic related complications and associated conditions are chosen from obesity, micro and macro vascular diseases, nephropathy, neuropathy and eye diseases.

17. (Previously presented) An anti-diabetic agent consisting essentially of a compound of formula (1)



Formula (1)

wherein

R^1 is H or a group $-O-R^{20}$, where R^{20} is H, a glycosylic ether group (glycoside ether), C_{1-6} alkyl group, or R^1 together with R^2 or R^{10} forms a bond (C_1-C_2 or C_1-C_{10} double bond, respectively);

R^2 is H or a group $-O-R^{21}$, where R^{21} is H, a glycosylic ether group (glycoside ether), or together with R^4 forms a bond (lactone) or R^2 together with R^1 or R^3 forms a bond (C_1-C_2 or C_2-C_3 double bond, respectively);

R^3 is H, $=O$, or $-O-R^{22}$, where R^{22} is H or a glycosylic ether group (glycoside ether), or R^3 together with R^2 forms a bond (C_2-C_3 double bond);

R^4 is OH, or $-OR^{23}$, where R^{23} is unsubstituted or substituted C_{1-20} alkyl, allyl, amidine, or $-NR^{24}R^{25}$; R^{24} and R^{25} may or may not be the same, are hydrogen, C_{1-20} alkyl, or allyl; or R^4 together with R^{21} or R^{28} forms a bond (lactone);

R^5 is H or a glycosylic ester (glycoside ester) group, or unsubstituted or substituted C_{1-20} alkyl esters, allyl esters, active esters;

R^6 is H or OH or together with R^7 forms a bond ($C_{11}-C_{12}$ double bond);

R^7 is H, =O, or $-OR^{26}$, where R^{26} is H or a glycosylic ether group (glycoside ether) or R^7 together with R^6 forms a bond (C_{11} - C_{12} double bond);

R^8 is H, hydroxyl, mercaptan, or halogen, amino, azido, $NR^{24}R^{25}$, unsubstituted or substituted C_{1-20} alkyl or allyl, or $-OR^{27}$, where R^{27} is a glycosylic ether group (glycoside ether);

R^9 is H or OH, or together with R^{15} forms a bond (C_9 - C_{15} bond);

R^{10} is H, CH_3 , CHO, COOH, or a glycosylic ester (glycoside ester) of said COOH, CH_2O-R^{28} or $-OR^{28}$, where R^{28} is H or together with R^4 forms a bond (lactone) or R^{10} together with R^1 forms a bond (C_1 - C_{10} double bond);

R^{11} is H, or OH or is absent;

R^{12} is CH_3 , CH_2OH , COOH or a glycosylic ester (glycoside ester) of said COOH;

R^{13} is methylene, or a divalent hetero-atom, or NR^{29} , where R^{29} is NHR^{30} or OR^{30} where R^{30} is H, or C_{1-20} alkyl; and a double bond is present between C_{16} and R^{13} when R^{11} is absent; or R^{13} is H, OH, CH_3 , CHO, CH_2X , where X is halogen, $CHNR^{29}$ where R^{29} is NHR^{30} or OR^{30} where R^{30} is H or C_{1-20} alkyl when R^{11} is H or OH; with the proviso that where R^{11} is OH, R^{13} is not OH;

R^{14} is H or OH;

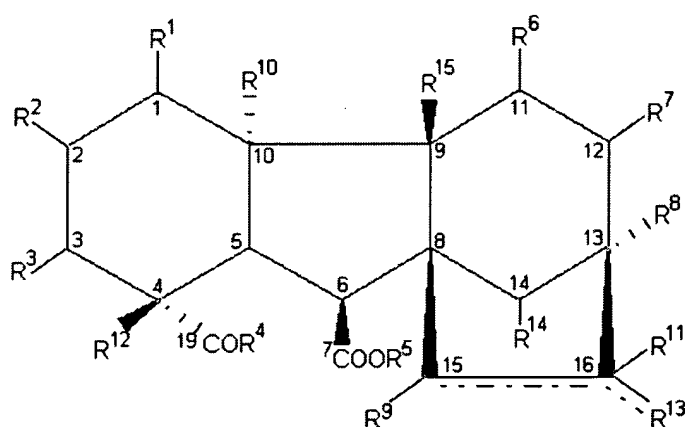
R^{15} is H, or together with R^9 forms a bond (C_9 - C_{15} bond);

and/or its pharmaceutically acceptable lactones, esters, active esters, salts and organic bases as an active ingredient, in combination with substances selected from the group

consisting of insulin, its fragment derivatives, IGFs, and growth factors, or combinations thereof, together with a pharmaceutically acceptable carrier.

18. (Original) An anti-diabetic agent according to claim 17, wherein the agent is a medicament suitable for administration with a medicator.

19. (Previously presented) An anti-diabetic agent consisting essentially of a compound of formula (1)



Formula (1)

wherein

R¹ is H or a group -O-R²⁰, where R²⁰ is H, a glycosylic ether group (glycoside ether), C₁₋₆ alkyl group, or R¹ together with R² or R¹⁰ forms a bond (C₁-C₂ or C₁-C₁₀ double bond, respectively);

R² is H or a group -O-R²¹, where R²¹ is H, a glycosylic ether group (glycoside ether), or together with R⁴ forms a bond (lactone) or R² together with R¹ or R³ forms a bond (C₁-C₂ or C₂-C₃ double bond, respectively);

R³ is H, =O, or -O-R²², where R²² is H or a glycosylic ether group (glycoside ether), or R³ together with R² forms a bond (C₂-C₃ double bond);

R^4 is OH, or $-OR^{23}$, where R^{23} is unsubstituted or substituted C_{1-20} alkyl, allyl, amidine, or $-NR^{24}R^{25}$; R^{24} and R^{25} may or may not be the same, are hydrogen, C_{1-20} alkyl, or allyl; or R^4 together with R^{21} or R^{28} forms a bond (lactone);

R^5 is H or a glycosylic ester (glycoside ester) group, or unsubstituted or substituted C_{1-20} alkyl esters, allyl esters, active esters;

R^6 is H or OH or together with R^7 forms a bond ($C_{11}-C_{12}$ double bond);

R^7 is H, =O, or $-OR^{26}$, where R^{26} is H or a glycosylic ether group (glycoside ether) or R^7 together with R^6 forms a bond ($C_{11}-C_{12}$ double bond);

R^8 is H, hydroxyl, mercaptan, or halogen, amino, azido, $NR^{24}R^{25}$, unsubstituted or substituted C_{1-20} alkyl or allyl, or $-OR^{27}$, where R^{27} is a glycosylic ether group (glycoside ether);

R^9 is H or OH, or together with R^{15} forms a bond (C_9-C_{15} bond);

R^{10} is H, CH_3 , CHO, COOH, or a glycosylic ester (glycoside ester) of said COOH, CH_2O-R^{28} or $-OR^{28}$, where R^{28} is H or together with R^4 forms a bond (lactone) or R^{10} together with R^1 forms a bond (C_1-C_{10} double bond);

R^{11} is H, or OH or is absent;

R^{12} is CH_3 , CH_2OH , COOH or a glycosylic ester (glycoside ester) of said COOH;

R^{13} is methylene, or a divalent hetero-atom, or NR^{29} , where R^{29} is NHR^{30} or OR^{30} where R^{30} is H, or C_{1-20} alkyl; and a double bond is present between C_{16} and R^{13} when R^{11} is absent; or R^{13} is H, OH, CH_3 CHO, CH_2X , where X is halogen, $CHNR^{29}$

where R^{29} is NHR^{30} or OR^{30} where R^{30} is H or C_{1-20} alkyl when R^{11} is H or OH; with the proviso that where R^{11} is OH, R^{13} is not OH;

R^{14} is H or OH;

R^{15} is H, or together with R^9 forms a bond (C_9-C_{15} bond);

and/or its pharmaceutically acceptable lactones, esters, active esters, salts and organic bases as an active ingredient, in combination with substances selected from the group consisting of insulin, its fragment derivatives, IGFs, and growth factors, or combinations thereof, together with pharmaceutically acceptable carriers or excipients, wherein the agent is a slow release composition.

20. (Original) An anti-diabetic agent according to claim 17, wherein the agent is for oral administration.

21. (Original) An anti-diabetic agent according to claim 17, wherein the agent is for inhalation administration.

22. (Original) An anti-diabetic agent according to claim 17, wherein the agent is for transdermal administration.

23. (Original) An anti-diabetic agent according to claim 17, wherein the agent is for parenteral injection.

24. (Original) An anti-diabetic agent according to claim 17, wherein the agent is for topical, rectal, or vaginal administration.

25. (Canceled)

26. (Previously presented) An anti-diabetic agent according to claim 17, wherein the pharmaceutically acceptable salt is a sodium salt of formula (1).

27. (Previously presented) An anti-diabetic agent according to claim 17, wherein the pharmaceutically acceptable salt is a zinc salt of formula (1).

28. (Previously presented) An anti-diabetic agent according to claim 17, wherein the pharmaceutically acceptable ester is a ethyl ester of formula (1).

29. (Previously presented) A method of manufacturing an anti-diabetic agent according to claim 17, comprising combining a compound selected from formula (1) and its pharmaceutically acceptable lactones, esters, active esters, salts and organic bases in combination with substances selected from the group consisting of insulin, its fragment derivatives, IGFs, and growth factors, or combinations thereof, with a pharmaceutically acceptable carrier.

Claims 30-38: (Cancelled)

39. (Previously presented) The method of claim 11, wherein the complications and associated conditions of diabetes are one or more of: obesity, micro and macro vascular diseases, nephropathy, neuropathy, eye diseases, and diabetic ulcerations.

40. (Previously presented) The method of claim 11, wherein the pharmaceutically acceptable salts are selected from alkali metal salts, alkaline earth metal salts, metal, and salts of ammonium or salts of organic bases.

41. (Previously presented) The method of claim 40, wherein the organic bases are lidocaine, or $\text{NR}^{16} \text{R}^{17} \text{R}^{18} \text{R}^{19}$, where R^{16} , R^{17} , R^{18} , R^{19} , which may be the same or not the same, are hydrogen, or substituted or unsubstituted C_{1-20} alkyl, alkanol, or aryl groups.